

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: )

Hisashi ICHIMURA et al. )

Serial No.: 09/902,256 )

Filed: July 11, 2001) )

Group Art Unit:1751

Examiner: Preeti Kumar

ANIMAL FIBER SUPERIOR IN )

IN SHRINK PROOFING AND )

METHOD FOR PREPARATION )

THEREOF )



Handwritten signature and date 4-4-03.

DECLARATION PURSUANT TO 37 C.F.R. §1.132

Honorable Commissioner of Patents and Trademarks  
Washington, D.C. 20231

Sir:

I, Kazuhiro Nakase, declare that:

1. I am one of the co-inventors of the invention disclosed and claimed in the application identified in caption.

2. I currently reside at 1-46-1-407 Kisabenishi, Katano, Osaka 572-0041 Japan.

3. I received the degree of Maser of Applied Reaction Chemistry from Graduate School of Engineering Department of FUKUI University on March 31, 1992.

4. I have been employed since April 1, 1992 by KURABO INDUSTRIES LTD., the assignee of the present application, and have been engaged in research and development of fiber processing technology (including wool fiber) for recent 4 years.

5. I conducted the experiments in order to demonstrate the difference of modified wools treated according to Hojo (United States Patent No. 5,824,113) and the present invention, and I beg to submit an exact report thereon.

6. Experiment

① Samples

(i) Sample 1: Belt wool sliver (non-treated)

The Belt sliver was prepared as follows: sliver (25 g/m) made of Merino wool of 20.7  $\mu$  from Australia were transferred to a rotary gill, and the wool sliver was fiber-opened into a belt by drafting at a ratio of 1.66. The same wool sliver was used for preparation of samples (ii) and (iii) below.

? (ii) Sample 2: Modified wool sliver treated according to Example 3 of the present application.

(iii) Sample 3: Modified wool sliver treated according to Example 1 of Hojo.

## ② Evaluation Method

(i) Observation of Scales on Surface of Wool

The surface of the wool was observed by an Scanning Electron Microscope, S-3500N manufactured by Hitachi to observe whether scales existed on the surface of modified wool or not.

(ii) Water Repellency (Sink-Float Method)

For measuring water repellency of the treated wool, the sliver was gilled to be fiber-opened, and 1 g was sampled, 800 mL of distilled water was charged into a 1-L beaker and the sample was floated on the water surface and sedimentation condition was observed.

(iii) Allwörden reaction (Confirmation of existence of epicuticle layer)

Several wool single fibers were put on a glass plate, and several droplets of saturated bromine water were dropped thereon, and immediately after this, the state of the surface of each fiber was observed under an optical microscope. When any epicuticle layer existed, bubbles would be generated on

the surface of the fiber. Therefore, the existence of any epicuticle layer was confirmed depending on the generation of bubbles.

③ Result of Evaluation

Table 1

		Sample 1 (non-treated)	Sample 2 (present invention)	Sample 3 (Hojo)
Observation by Electron Microscope	Existence or Non-Existence of Scales	Scales (Fig. 1(A))	Scales (Fig. 1(B))	no-Scales (Fig. 1(C))
Water-Repellency	Sedimentation	No Sediment (Fig. 2)	No Sediment (Fig. 2)	Instant Sediment (Fig. 2)
Allwörden Reaction	Generation of Bubbles (Confirmation of Epicuticle layer)	Generation of Bubbles (Existence of Epicuticle layer) Fig. 3(A)	Generation of Bubbles (Existence of Epicuticle layer) Fig. 3(B)	No-Generation of Bubbles (Non-Existence of Epicuticle layer) Fig. 3(C)

7. It is declared by the undersigned that all statements made herein of undersigned's own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonments, or both, under 18 U.S. Code 1001 and that such willful false statements may jeopardize the validity of this application or any patent issuing thereon.

Dated this 18 day of March, 2003

Kazuhiro Nakase  
Kazuhiro Nakase